AMENDMENTS TO THE CLAIMS

Pursuant to 37 CFR 1.121, presented below are the pending claims having status identifiers. Claims 15-21 and 31-41 are pending in the application. Claims 1-14 and claims 22-30 were previously canceled.

Applicant herewith cancels claims 15-21 and 31-39. Allowed claim 40 is herewith amended, and allowed claim 41 is unchanged. Claims 42- 66 are newly added.

We claim:

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39. (Canceled)

40. (Currently amended) A spindle motor comprising:

a journal bearing defined between an inner component and an outer component, wherein the inner component and the outer component are positioned for relative rotation, and define a portion of a stationary component and a rotatable component;

a fluid recirculation passageway including a first fluid passageway defined within the outer component, the first fluid passageway in fluid communication with a second fluid passageway, the second fluid passageway defined between the outer component and a radial member extending radially from the inner component, wherein the first fluid passageway and the second fluid passageway are in fluid communication with the journal bearing at separate locations;

a shield, connected to one of the stationary component and the rotatable component, defining a reservoir with the outer component, wherein a recirculation plenum is defined by a junction joining the reservoir, the first fluid passageway and the second fluid passageway;

means for creating an asymmetric pressure gradient within the fluid recirculation passageway, circulating fluid and purging air in the fluid, wherein the fluid circulates about a substantial portion of the journal bearing, the first fluid passageway, and the second fluid passageway, wherein means for creating the asymmetric pressure gradient, circulating fluid and purging air comprises spiral grooves defined on at least one of the radial member and the outer component to generate pumping pressure to drive fluid recirculation and to pump fluid from the second fluid passageway toward the inner component and into the journal bearing, when the inner component and the outer component are in relative rotational motion; and

means for sealing the reservoir comprising at least one of a capillary seal defined between the shield and the outer component, and a grooved pumping seal formed by spiral grooves on at least one of the radial member and the shield adjacent to an outer diameter gap defined between the shield and an outer diameter of the radial member, the outer diameter gap joining the recirculation plenum junction.

41. (Previously presented) A spindle motor comprising:

a journal bearing defined between an inner component and an outer component, wherein the inner component and the outer component are positioned for relative rotation, and define a portion of a stationary component and a rotatable component;

a fluid recirculation passageway including a first fluid passageway defined within the outer component, the first fluid passageway in fluid communication with a second fluid passageway, the second fluid passageway defined between the outer component and a radial member extending radially from the inner component, wherein the first fluid passageway and the second fluid passageway are in fluid communication with the journal bearing at separate locations;

a shield, connected to one of the stationary component and the rotatable component, defining a reservoir with the outer component, wherein a recirculation plenum is defined by a junction joining the reservoir, the first fluid passageway and the second fluid passageway;

means for sealing the reservoir; and

an asymmetrical grooving pattern on an axial end of one of the inner component and the outer component, for providing radial stiffness substantially focused at an apex of the asymmetrical grooving pattern, and for generating pressure substantially equivalent to the pressure located at a journal plenum, wherein the journal plenum is positioned between the asymmetric grooving pattern and the radial member and defined at a joining position of the first fluid passageway and the journal bearing.

42. (New) The spindle motor as in claim 40, wherein the reservoir is structured to hold up to 2.5 mg. of fluid.

43. (New) The spindle motor as in claim 40, further comprising axial channels on at least a portion of an inner surface of the shield substantially extending from the recirculation plenum and along the reservoir, to allow air within the fluid to move along the channels and be purged from the fluid, and to retain fluid.

44. (New) The spindle motor as in claim 40, further comprising a fill-hole defined within the shield, wherein a meniscus is positioned between the fill-hole and the fluid in the reservoir, the fill hole making an angle with a surface of the shield.

45. (New) The spindle motor as in claim 40, wherein the inner component is affixed to a base and to a top cover plate, wherein the outer component rotates relative to the inner component.

46. (New) The spindle motor as in claim 40, wherein an engagement interface of the radial member with a base ranges from 3 millimeters to 5 millimeters, for dynamic parallelism.

47. (New) The spindle motor as in claim 40, wherein the inner component comprises a shaft and the outer component comprises a sleeve.

48. (New) The spindle motor as in claim 40, wherein the first fluid passageway is defined through a sleeve.

49. (New) The spindle motor as in claim 40, wherein the radial member is a thrust plate and the second fluid passageway is defined between the thrustplate and the outer component.

50. (New) The spindle motor as in claim 40, wherein the shield and the outer component form adjacent surfaces, wherein the adjacent surfaces are relatively tapered, and wherein the relatively tapered adjacent surfaces converge toward the recirculation plenum.

51. (New) The spindle motor as in claim 40, wherein the shield is positioned for serving as a travel limiter to the outer component.

52. (New) The spindle motor as in claim 40, further comprising a symmetrical grooving pattern included on a portion of one of the inner component and the outer component comprising one of a herringbone pattern and a sinusoidal pattern for providing radial stiffness substantially focused at an apex of the grooving pattern.

53. (New) The spindle motor as in claim 40, further comprising an asymmetrical grooving pattern on an axial end of one of the inner component and the outer component, for providing radial

stiffness substantially focused at an apex of the asymmetrical grooving pattern, and for generating pressure substantially equivalent to the pressure located at a journal plenum, wherein the journal plenum is positioned between the asymmetric grooving pattern and the radial member and defined at a joining position of the first fluid passageway and the journal bearing.

54. (New) The spindle motor as in claim 40, further comprising a variable journal bearing gap for providing asymmetric journal bearing pressure distribution, wherein the variable journal bearing gap is radially wider substantially adjacent to a journal plenum as compared to the remainder of the journal bearing, wherein the journal plenum is defined at a joining position of the first fluid passageway and the journal bearing.

55. (New) The spindle motor as in claim 41, further comprising means for creating an asymmetric pressure gradient within the fluid recirculation passageway, circulating fluid and purging air in the fluid, wherein the fluid circulates about a substantial portion of the journal bearing, the first fluid passageway, and the second fluid passageway.

56. (New) The spindle motor as in claim 41, wherein the reservoir is structured to hold up to 2.5 mg. of fluid.

57. (New) The spindle motor as in claim 41, further comprising axial channels on at least a portion of an inner surface of the shield substantially extending from the recirculation plenum and along the reservoir, to allow air within the fluid to move along the channels and be purged from the fluid, and to retain fluid.

58. (New) The spindle motor as in claim 41, further comprising a fill-hole defined within the shield, wherein a meniscus is positioned between the fill-hole and the fluid in the reservoir, the fill hole making an angle with a surface of the shield.

59. (New) The spindle motor as in claim 41, wherein the inner component is affixed to a base and to a top cover plate, wherein the outer component rotates relative to the inner component.

60. (New) The spindle motor as in claim 41, wherein an engagement interface of the radial member with a base ranges from 3 millimeters to 5 millimeters, for dynamic parallelism.

61. (New) The spindle motor as in claim 41, wherein the inner component comprises a shaft and the outer component comprises a sleeve.

62. (New) The spindle motor as in claim 41, wherein the first fluid passageway is defined through a sleeve.

63. (New) The spindle motor as in claim 41, wherein the radial member is a thrust plate and the second fluid passageway is defined between the thrustplate and the outer component.

64. (New) The spindle motor as in claim 41, wherein the shield and the outer component form adjacent surfaces, wherein the adjacent surfaces are relatively tapered, and wherein the relatively tapered adjacent surfaces converge toward the recirculation plenum.

65. (New) The spindle motor as in claim 41, wherein the shield is positioned for serving as a travel limiter to the outer component.

66. (New) The spindle motor as in claim 41, further comprising a variable journal bearing gap for providing asymmetric journal bearing pressure distribution, wherein the variable journal bearing gap is radially wider substantially adjacent to a journal plenum as compared to the remainder of the journal bearing, wherein the journal plenum is defined at a joining position of the first fluid passageway and the journal bearing.